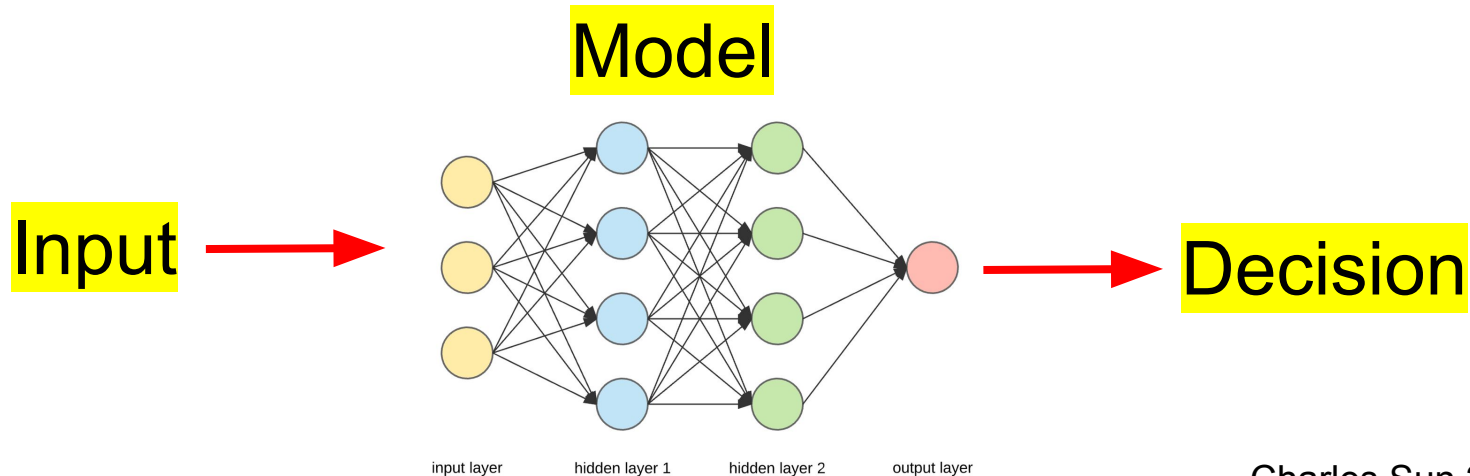


Class 4: Machine Learning

A field of computer science that explores how machines can learn on their own to perform certain tasks such as classification of data. Increasingly Machine Learning is used in robotics for human-machine interaction.



Hands-On: Computer Science: Machine Learning

Build an image learning model at Teachable Machine

<https://teachablemachine.withgoogle.com/train>

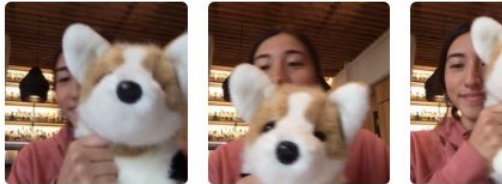


Image Project

Teach based on images, from files or your webcam.



New Image Project

Standard image model

Best for most uses

224x224px color images

Export to TensorFlow, TFLite, and TF.js

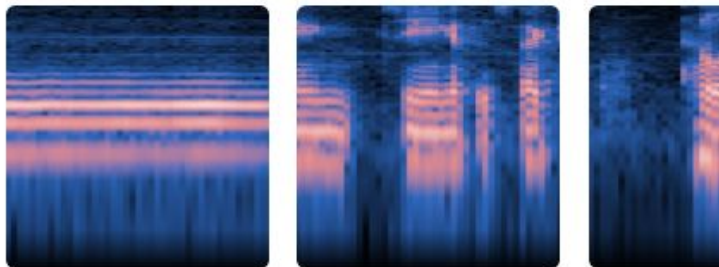
Model size: around 5mb

- 1, Use the **Webcam** on your laptop to capture a series of images for each object you wish the model to identify...
2. Click on Train Model

Teachable Machine

The screenshot displays the Teachable Machine web interface. On the left, there are two class cards, 'Class 1' and 'Class 2'. Each card has a section titled 'Add Image Samples:' with two buttons: 'Webcam' and 'Upload'. A red arrow labeled '1' points to the 'Webcam' button on the 'Class 2' card. In the center, there is a 'Training' panel with a 'Train Model' button. A red arrow labeled '2' points to this button. To the right of the training panel is a 'Preview' panel with an 'Export Model' button and a message: 'You must train a model on the left before you can preview it here.'

To explore further, try different models: audio, pose, etc.



Audio Project

Teach based on one-second-long sounds, from files or your microphone.



Pose Project

Teach based on images, from files or your webcam.

Question: How does Machine Learning work?

A good starting point...

<https://www.youtube.com/watch?v=ukzFI9rgwfU>

Note: Watch this at home. Youtube.com is blocked at school.